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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,939	03/16/2004	Markus Hammes	P2003,0168	2905

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EXAMINER

D AGOSTA, STEPHEN M

ART UNIT PAPER NUMBER

2617

DATE MAILED: 03/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/801,939	HAMMES ET AL.	
	Examiner	Art Unit	
	Stephen M. D'Agosta	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-8, 11-13, 16, 19, 22-26 is/are rejected.
- 7) ☒ Claim(s) 9,10,14,15,17,18,20 and 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 3-9-2006 have been fully considered but they are not persuasive.

1. The applicant's Terminal Disclaimer and Specification change are noted.
2. The applicant argues the prior art does not teach the limitations of claim 1.

The examiner disagrees since the claim is broadly written and therefore broadly interpreted. The claim merely states that there is a frequency hopping system with time intervals of transmission and reception and that RSSI measurements are made during the non-transmission/reception times (as specified by the applicant's specification, page 8, Lines 18-25). Grayson clearly teaches a frequency hopping system (see title) while Sakuma teaches detecting a carrier (eg. determining RSSI) during "a guard time period between transmission burst and a reception period". The applicant is invited to further amend their claim(s) such that they more specifically define their limitations to not read on the prior art of record. Case in point, the applicant has written several pages of "interpretation" yet they have not included any of this material in their claim(s) which would require the examiner's consideration.

3. The examiner disagrees with the applicant's characterization that the combination of the prior art is improper since it would be inoperable. The measurement and use of RSSI data is well known in wireless communications and can dictate steps to be taken by the network or mobile. Grayson does not stipulate any constraints on RSSI measurements while Sakuma provides means for measuring during guard periods. Even if Grayson taught measuring during transmission/reception, adding Sakuma's teachings would provide means for an alternate measuring time (eg. during guard bands as well). Therefore, the combination is considered to be correct without rendering it inoperable.

4. A Final office action is found below (which includes the new claims).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7-8 and 24 and 26 rejected under 35 U.S.C. 103(a) as being unpatentable over Grayson et al. US 5,995,816 and further in view of Sakuma US 6,671,331.

As per **claims 7 and 24 and 26**, Grayson teaches a method for determining frequency channel quality in a mobile radio system, comprising;

in a predetermined temporal sequence of transmit time intervals and receive time intervals, transmitting respective data blocks on respective frequency channels during respective ones of the transmit time intervals and receiving respective data blocks on respective frequency channels during respective ones of the receive time intervals (abstract teaches use of Frequency Hopping technology, which reads on transmitting at different times and frequencies. Also see C1, L9-17); and

for a first of the time intervals which has associated therewith a corresponding first frequency channel, making a received signal strength measurement on the first frequency channel (Abstract teaches making measurements on different frequencies) **but is silent on** during a period of time between the first time interval and a second of the time intervals that is adjacent the first time interval in the temporal sequence and not during the first and second time intervals AND/OR wherein the field strength is measured directly before transmission or reception of the data block, but still during a transient phase of locking onto a new frequency in the mobile radio system..

The primary examiner notes that Grayson is not specific as to the precise time the measurements can be made (and/or cannot be made). Hence **Sakuma** is put forth since he specifically teaches RSSI measurements/calculations during a guard time period, as specified by the applicant (specification, page 8, Lines 18-25):

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According to the present invention, the threshold value for detecting a carrier is measured in a guard time period between a transmission burst and a reception burst. (C3, L13-16)

It would have been obvious to one skilled in the art at the time of the invention to modify Grayson, such that it measures during a period of time between the first time interval and a second of the time intervals that is adjacent the first time interval in the temporal sequence, to provide means for measuring signals at any time interval during communications.

As per **claim 8**, Grayson teaches claim 7, including using frequency hopping to select the frequency channels (C1, L9-16).

Claims 11, 16, 19 and 22 rejected under 35 U.S.C. 103(a) as being unpatentable over Grayson/Sakuma and further in view of Van der Tuijn et al. US 6,683,886 and Lemilainen et al. US 6,766,160.

As per **claim 11, 16, 19 and 22**, Grayson teaches claim 8/13/12/7 **but is silent on** including providing the mobile radio system as a Bluetooth system.

The primary examiner notes that frequency hopping is used by different communications systems such as GSM (per Grayson) and in Bluetooth. The examiner puts forth **Van der Tuijn** who teaches Bluetooth using frequency hopping:

In the Bluetooth communication protocol, a channel is represented by a pseudo-random hopping sequence through 23 or 79 radio frequency (RF) carriers. A channel hopping sequence may be derived from a unit unique address. A channel is divided into time slots (0 to $2^{27}-1$ slots) counted cyclically. Channel slots are described in further detail below with reference to FIG. 5A-FIG. 5B. Individual time slots correspond to a frequency hop in accordance with the Bluetooth standard. Consecutive hops

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correspond to different hop frequencies and a nominal hop rate of 1600 hops/s is provided. (C4, L14-24)

For continuity's sake, the examiner also notes that there are dual-mode phones known in the art which support both GSM and Bluetooth communications, see **Lemilainen**:

"At least one proposal has been set forth by which to provide a dual-mode mobile terminal, operable in both a conventional cellular, such as a GSM (Global System for Mobile communications) communication system, and also a WIO network. In particular, one WIO network is proposed to utilize Bluetooth radio technology in which Bluetooth signals form the radio access medium between the mobile terminal and corresponding infrastructure of the WIO network". (C2, L13-28)

It would have been obvious to one skilled in the art at the time of the invention to modify Grayson, such that it includes providing the mobile radio system as a Bluetooth system, to support well known industry standard communications protocols.

Claim 12 rejected under 35 U.S.C. 103(a) as being unpatentable over Grayson/Sakuma and further in view of Bergstrom et al. US 6,118,805.

As per **claim 12**, Grayson teaches claim 7, **but is silent on** including using adaptive frequency hopping to select the frequency channels.

Adaptive frequency hopping is well known in the art, also see **Bergstrom** who teaches the adaptive frequency hopping concept:

The FH adaptation module 34 is operative for implementing adaptive frequency hopping spread spectrum techniques in the system 10. (C4, L62-65)

It would have been obvious to one skilled in the art at the time of the invention to modify Grayson, such that it uses adaptive frequency hopping to select the frequency channels, to provide means for supporting well known frequency hopping operations.

Claims 13 and 25 rejected under 35 U.S.C. 103(a) as being unpatentable over Grayson/Sakuma and further in view of Gillis et al. US 5,323,447.

As per **claims 13 and 25**, Grayson teaches claim 12/24, **but is silent on** wherein said using step includes removing the first frequency channel from an adaptive frequency hopping pattern based on the measured received signal strength.

Gillis teaches removing channels from a frequency hopping pattern based on interference:

The control unit stores each one of the interfering occurrences for this channel up to, for example, 50 occurrences after which the control unit starts a process which allows the base unit 10 and the handset unit 20 to remove this channel from the frequency hopping cycle and replace it with a selected channel from the second group of channels. (C10, L34-53)

It would have been obvious to one skilled in the art at the time of the invention to modify Grayson, such that said using step includes removing the first frequency channel from an adaptive frequency hopping pattern based on the measured received signal strength, to provide means for measuring RSSI/interference and using only those channels which have superior channel quality.

Claim 23 rejected under 35 U.S.C. 103(a) as being unpatentable over Grayson/Sakuma and further in view of Bensky et al. US 6,859,761.

As per **claim 23**, Grayson teaches Claim 7, **but is silent on** wherein the transmit time intervals and the receive time intervals occur alternately in the temporal Sequence

The primary examiner believes frequency hopping to inherently have alternate transmit and receive times. He also puts forth **Bensky**, who teaches frequency hopping and alternating transmit/receive times:

The operation of this embodiment will be described with reference to FIGS. 8-9. As shown in FIG. 8, FHSS signal S1A is transmitted from base station transceiver 500 to remote unit 600. As shown in the timing diagram of FIG. 9, the S1A is

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comprised of a sequence of carriers $f_1, f_2, f_3 \dots f_n$. To implement a half-duplex system, where the return transmit carriers have the same frequency as the base station transmit carriers, transmit and receive operations must be time multiplexed. In this example, the carrier of S1A having a frequency of $f_{\text{sub}.0}$ is transmitted by the base station to the remote station during a first time interval (B=>R). Subsequently, the same phase-shifter carrier is received by the base station during a second time interval (R=>B). Next, $f_{\text{sub}.1}$ is transmitted and received during alternating time intervals (B=>R) and (R=>B). In this way, the base station and remote station can utilize the same transmit band without interference. (C14, L36-52).

It would have been obvious to one skilled in the art at the time of the invention to modify Grayson, such that the transmit time intervals and the receive time intervals occur alternately in the temporal Sequence, to provide means for supporting alternate transmit/receive communications methods as supported by frequency hopping systems.

Allowable Subject Matter

Claims 9-10, 14-15, 17-18 and 20-21 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

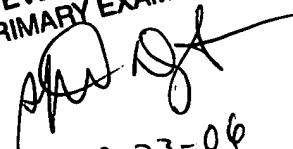
Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. D'Agosta whose telephone number is 571-272-7862. The examiner can normally be reached on M-F, 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Trost can be reached on 571-272-7872. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

STEVE M. D'AGOSTA
PRIMARY EXAMINER

3-23-06